

What is claimed is :

1. A substrate for liquid crystal display elements comprising:

a transparent substrate; and

a predetermined number of pairs of a first transparent film having a high refractive index and a second transparent film having a low refractive index, each composed of a dielectric material and stacked on said transparent substrate;

wherein:

said first transparent film has a refractive index of light of not less than 1.8 at a wavelength of 550nm, and said second transparent film is stacked on said first transparent film, said second transparent film having a refractive index of light of not more than 1.5 at the wavelength of 550nm;

said predetermined number is an integer not less than 1; and

said first transparent film and said second transparent film each have a film thickness thereof set to such a value that the light reflectance in a visible light region of each of said first and second transparent films is within a range of 5 - 95%.

2. A substrate for liquid crystal display elements as claimed in claim 1, including a transparent roughened surface scattering layer stacked on said transparent substrate.

3. A substrate for liquid crystal display elements as claimed in claim 1 ~~or 2~~, wherein said light reflectance in the visible light region of each of said first and second transparent films is in a range of not less than 5% but less than 25%.

4. A substrate for liquid crystal display elements as claimed in claim 3, wherein when said

predetermined number is 1, said first transparent film has a film thickness of 20 - 130nm, and said second transparent film has a film thickness of 50 - 110nm.

5 5. A substrate for liquid crystal display elements as claimed in claim 3, wherein when said predetermined number is 2, said first transparent film has a film thickness of 5 - 60nm, and said second transparent film has a film thickness of 5 - 150nm.

10 6. A substrate for liquid crystal display elements as claimed in claim 3, wherein when said predetermined number is 3, said first transparent film has a film thickness of 3 - 80nm, and said second transparent film has a film thickness of 5 - 160nm.

15 7. A substrate for liquid crystal display elements as claimed in claim 3, wherein when said predetermined number is 4, said first transparent film has a film thickness of 5 - 80nm, and said second transparent film has a film thickness of 5 - 80nm.

20 8. A substrate for liquid crystal display elements as claimed in claim 1 ~~or 2~~, wherein said light reflectance in the visible light region of each of said first and second transparent films is in a range of not less than 25% but less than 45%.

25 9. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said predetermined number is 1, said first transparent film has a film thickness of 80 - 110nm, and said second transparent film has a film thickness of 40 - 60nm.

30 10. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said predetermined number is 2, said first transparent film has a film thickness of 20 - 180nm, and said second transparent film has a film thickness of 30 - 100nm.

35 11. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said predetermined number is 3, said first transparent film

has a film thickness of 10 - 130nm, and said second transparent film has a film thickness of 10 - 170nm.

12. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said
5 predetermined number is 4, said first transparent film has a film thickness of 20 - 110nm, and said second transparent film has a film thickness of 5 - 100nm.

13. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said
10 predetermined number is 5, said first transparent film has a film thickness of 10 - 110nm, and said second transparent film has a film thickness of 5 - 110nm.

14. A substrate for liquid crystal display elements as claimed in claim 8, wherein when said
15 predetermined number is 6, said first transparent film has a film thickness of 10 - 80nm, and said second transparent film has a film thickness of 30 - 100nm.

15. A substrate for liquid crystal display
20 elements as claimed in claim 1 ~~or 2~~, wherein said light reflectance in the visible light region of each of said first and second transparent films is in a range of not less than 45% but less than 65%.

16. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said
25 predetermined number is 2, said first transparent film has a film thickness of 60 - 180nm, and said second transparent film has a film thickness of 40 - 90nm.

17. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said
30 predetermined number is 3, said first transparent film has a film thickness of 20 - 160nm, and said second transparent film has a film thickness of 10 - 150nm.

18. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said
35 predetermined number is 4, said first transparent film has a film thickness of 20 - 180nm, and said second

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transparent film has a film thickness of 10 - 110nm.

19. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said predetermined number is 5, said first transparent film
5 has a film thickness of 30 - 190nm, and said second transparent film has a film thickness of 10 - 140nm.

20. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said predetermined number is 6, said first transparent film
10 has a film thickness of 10 - 150nm, and said second transparent film has a film thickness of 10 - 100nm.

21. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said predetermined number is 7, said first transparent film
15 has a film thickness of 20 - 150nm, and said second transparent film has a film thickness of 5 - 110nm.

22. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said predetermined number is 8, said first transparent film
20 has a film thickness of 20 - 130nm, and said second transparent film has a film thickness of 5 - 110nm.

23. A substrate for liquid crystal display elements as claimed in claim 15, wherein when said predetermined number is 9, said first transparent film
25 has a film thickness of 20 - 120nm, and said second transparent film has a film thickness of 10 - 90nm.

24. A substrate for liquid crystal display elements as claimed in claim 1 ~~or 2~~, wherein said light reflectance in the visible light region of each
30 of said first and second transparent films is in a range of not less than 65% but less than 95%.

25. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 3, said first transparent film
35 has a film thickness of 80 - 160nm, and said second transparent film has a film thickness of 40 - 110nm.

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26. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 4, said first transparent film has a film thickness of 60 - 140nm, and said second transparent film has a film thickness of 40 - 100nm.

27. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 5, said first transparent film has a film thickness of 30 - 130nm, and said second transparent film has a film thickness of 20 - 170nm.

28. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 6, said first transparent film has a film thickness of 20 - 180nm, and said second transparent film has a film thickness of 10 - 140nm.

29. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 7, said first transparent film has a film thickness of 10 - 150nm, and said second transparent film has a film thickness of 30 - 130nm.

30. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 8, said first transparent film has a film thickness of 5 - 200nm, and said second transparent film has a film thickness of 5 - 150nm.

31. A substrate for liquid crystal display elements as claimed in claim 24, wherein when said predetermined number is 9, said first transparent film has a film thickness of 5 - 200nm, and said second transparent film has a film thickness of 5 - 140nm.

32. A substrate for liquid crystal display elements as claimed in ^{Claim 1} ~~any one of claims 1 to 31~~, wherein said second transparent film is formed of a material having a low refractive index consisting essentially of at least one compound selected from the group consisting of silicon dioxide, magnesium

fluoride, calcium fluoride, and lithium fluoride.

6- 33. A substrate for liquid crystal display
elements as claimed in ^{claim 1} ~~any one of claims 1 to 32~~,
wherein said second transparent film includes a
5 transparent film located farthest from said
transparent substrate, said transparent film being
formed of silicon dioxide and having a film thickness
of not less than 20nm.

10a 34. A substrate for liquid crystal display
elements as claimed in ^{claim 1} ~~any one of claims 1 to 33~~,
wherein said first transparent film is formed of a
material having a high refractive index consisting
essentially of at least one compound selected from the
group consisting of titanium dioxide, zirconium
15 dioxide, tantalum pentoxide, and tin oxide.

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